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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,304	MORITA, TETSUO	
	Examiner	Art Unit	
	Helene Rose	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-8* is/are pending in the application.

4a) Of the above claim(s) *4 and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. This is a response to a communication filed on 4/25/2007. Claims 1-2, and 7 have been amended. Claims 4 and 9 were cancelled. Therefore, Claims 1-3, 5-7, and 8 are presently pending examination.

Claim Objections

2. In view of Claims 1, 2, 4-5, and 7 are objected to because of the following informalities: Claims 1, 2, 4-5, and 7 have "comma's" cited after each limitation vs. a "semi-colon". Examiner withdraws the pending rejection.

Claim Rejections – 35 U.S.C – 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Horn et al (US Publication No. 2002/0107968).

Claim 1:

Regarding Claim 1, Horn teaches a transmission data generation method, comprising:

a fixed block size setting step of setting the size of a fixed block based on the overhead (page 5, section [0062], wherein the size of each block determines the efficiency of the chain reaction encoder and decoder where in generally the trade off between the overhead and the encoding/decoding speed for a fixed number of symbols, wherein the encoding/decoding speed in Mbps increases as the symbol size increases in which the amount of overhead, i.e., the number of extra output symbols that the decoder should collect greater than the block size, is proportionately smaller for larger blocks, and to minimize the required overhead the blocks should therefore be as large as possible, and for a fixed block size, increasing the symbol size improves encoding/decoding speed at the cost of overhead performance, Horn);

a variable block setting step of **calculating each time** the size of a variable block which cannot be divided by said fixed block (page 17, section [0184], wherein he VRFS scheduler may become less efficient since the variable rate fixed segment scheduler is not guaranteed to download at the maximum download rate Rd, wherein for equal sized segments Bmin, m=2, n=5 and Rd=5Rp/6, Equation 6 and Equation 7 are satisfied, but the VRFS scheduler cannot schedule the five segments to be downloaded to achieve uninterrupted play out at the client, and wherein the divided is displayed in the equation, and paragraph [0191], wherein to determine the size of each block segment in a media object so that the client can download the media object and playout it out uninterrupted, wherein this is calculated and indicated in step 1610, wherein the N(-2), N(-3), . . . N(-r) are initialized to zero and these are the sizes of the r-1 of the r pseudo-segments pre-pended by the FRVS scheduler to the sequence of segments and the other segment is pseudo-segment S(-1) and plays out for Ts seconds so N(-1)=Ts.multidot.Rp Mbits, Horn) and the overhead of the variable block for each segment of the contents when the size of the segment

is not an integer multiplication of the size of the fixed block (page 13, section [0137], wherein the startup latency number m to be the number of blocks that the client plays out in Ts seconds, i.e., m=Ts/Tf=Bmin.multidot.Ts/Rp, in which notes that m need not be an integer, Horn);

a segment size calculation step of calculating the size of a segment for each segment of the contents based on the size of the said fixed block (page 13, section [0132], wherein client downloads information about block i at time t, and define T(i) to be time and block I begins playing out, where again time is measured relative to the client, where time zero is when the client initiates the session and the download starts, and given a fixed maximum client download rate Rd, the goal of the MOD system is to achieve uninterrupted play out of the media object, Horn);

a segment division step of dividing the contents into segments according to the calculated size of said segment (page 7, section [0078], wherein the blocks or set of blocks are chosen to generate an output symbol will be referred to as the blocks associated with that output symbol, and page 7, section [0079] , wherein the block encoder provides the output symbol to a transmit module and the transmit module may also provide the key of each such output symbol and the set of blocks associated with each output symbol, and page 8, section [0082], wherein the receive module receives the output symbols and the receive module may use timing information in order to calculate the key or the block, Horn);

a block division step of dividing said divided segment into blocks page 7, section [0078], wherein each segment of the media object may be logically divided into plurality of disjoint blocks by the media block scheduler, in which segment is defined as dividing into segments, Horn); and

a meta contents creation step for creating the contents into meta contents by adding overhead for each one of said divided blocks (page 5, section [0059], wherein the client stores the packets for a block as they arrive and waits for the entire block as wherein meta contents are the packets; and page 19, section [0205], wherein the client storage requirement is limited, it may be preferable to increase the server bandwidth and the total number of segments in the media object, and place an upper limit on the segment size, and the server bandwidth can be further divided so that a segment finishes downloading as late as possible before it is scheduled to play out, Horn),

when the size of segment is an integer multiplication of the size of the fixed block, the overhead for each segment is set based on the overhead in said fixed block (page 5, section [0062], wherein the amount of overhead, i.e., the number of extra output symbols that the decoder should collect greater than the block size is proportionately smaller for larger blocks and for a fixed block size increasing the symbol size improves encoding/decoding speed at the cost of overhead performance; and page 14, section [0157], Horn), and when the size of the segment is not an integer multiplication of the size of the fixed block (page 13, section [0137], wherein the startup latency number m to be the number of blocks that the client plays out in Ts seconds, i.e., m=Ts/Tf=Bmin.multidot.Ts/Rp, in which notes that m need not be an integer, Horn), the overhead for each segment is **calculated each time** based on the overhead in said fixed block and the overhead in the variable block of said segment (page 5, section [0062], wherein the size of each block determines the efficiency of the chain reaction encoder and decoder where in generally the trade off between the overhead and the encoding/decoding speed for a fixed number of symbols, wherein the encoding/decoding speed in Mbps increases as the symbol size

increases in which the amount of overhead, i.e., the number of extra output symbols that the decoder should collect greater than the block size, is proportionately smaller for larger blocks, and to minimize the required overhead the blocks should therefore be as large as possible, and for a fixed block size, increasing the symbol size improves encoding/decoding speed at the cost of overhead performance, and paragraph [0191], wherein to determine the size of each block segment in a media object so that the client can download the media object and playout it out uninterrupted, wherein this is calculated and indicated in step 1610, wherein the N(-2), N(-3), . . . N(-r) are initialized to zero and these are the sizes of the r-1 of the r pseudo-segments pre-pended by the FRVS scheduler to the sequence of segments and the other segment is pseudo-segment S(-1) and plays out for Ts seconds so N(-1)=Ts.multidot.Rp Mbits, Horn).

Claim 2:

Regarding Claim 2, Horn teaches a transmission data generation method, comprising: a fixed block size setting step of setting the size of a fixed block based on the overhead (Refer to claim 1, wherein this limitation is substantially the same/or similar, Horn);

a fixed block playout time calculation stop calculating the playout time of said fixed block based on the size of said fixed block block (page 9, section [0093], wherein to calculate the value B(I,F), for the current output symbol, and wherein the calculator calculates the value B(I,F) of the output symbol being calculated based on a value faction, Horn[1]);

[1] The Examiner interprets the terms "transmission time" and "playout time" to be same functionality in which the method of both consist of carrying data between the server and the client, and determining the rate/calculating to serve each segment as to when client may start receiving and a time at which the client may stop receiving, but using different wording to address the claim limitations. Claim 5 can also read on independent claims 1,2, and 7. For example: Claim 5 states: calculating the number of fixed blocks included in the segment for each segment of the contents based on the ***transmission time*** of said segment and wherein Claim 7 states: calculates the playout time of fixed block based on the size of said fixed block and calculates playout time of a segment for each segment of contents based on the calculated ***playout time*** of the segment.

a variable block setting step of **calculating each time** the size or playout time of a variable block which cannot be divided by said fixed block and the overhead of the variable block for each segment of the contents when the size of the segment is not an integer multiplication of the size of the fixed block (Refer to claim 1, wherein this limitation is substantially the same/or similar, Horn);

a playout time calculation (Figure 1, diagrams 120(1) and 120(m), Horn) step of calculating the playout time of a segment for each segment of the contents based on the playout time of said fixed block (page 13, section [0132], wherein client downloads information about block i at time t, and define T(i) to be time and block I begins playing out, where again time is measured relative to the client, where time zero is when the client initiates the session and the download starts, and given a fixed maximum client download rate Rd, the goal of the MOD system is to achieve uninterrupted play out of the media object, Horn);

a transmission time calculation step of calculating the transmission time of a segment for each segment of the contents based on the calculated playout time of the segment (page 13, sections [0133] [0136], wherein the constraint in equation three is due to the fact that the client should have finished downloading block i by the time it needs to play it out, i.e., by the time blocks 0, . . . , i-1 have completed playing out, Horn);

a segment division step of dividing the contents into segments according to said calculated transmission time of the segment(page 5, section [0057], wherein a media object file may be divided into sequentially numbered blocks, where the blocks index indicates the temporal position of each block in playing out the media content; page 7, section [0078], wherein the blocks or set of blocks are chosen to generate an output symbol will be referred to as the blocks

associated with that output symbol; and page 7, section [0079] , wherein the block encoder provides the output symbol to a transmit module and the transmit module may also provide the key of each such output symbol and the set of blocks associated with each output symbol, and page 8, section [0082], wherein the receive module receives the output symbols and the receive module may use timing information in order to calculate the key or the block, Horn);

a block division step of dividing said divided segment into blocks (page 7, section [0078], wherein each segment of the media object may be logically divided into plurality of disjoint blocks by the media block scheduler, in which segment is defined as dividing into segments, Horn); and

a meta contents creation step for creating the contents into meta contents by adding overhead for each one of said divided blocks (Refer to claim 1, wherein this limitation is substantially the same/or similar, Horn),

when the size of segment is an integer multiplication of the size of the fixed block, the overhead for each segment is set based on the overhead in said fixed block (Refer to claim 1, wherein this limitation is substantially the same/or similar, Horn), and when the size of the segment is not an integer multiplication of the size of the fixed block, the overhead for each segment is **calculated each time** based on the overhead in said fixed block and the overhead in the variable block of said segment (Refer to claim 1, wherein this limitation is substantially the same/or similar, Horn).

Claims 3 and 8:

Regarding claims 3 and 8, Horn teaches wherein said time calculation means sets the size of said fixed block so that the overhead becomes a small value (page 5, section [0062], wherein

the amount of overhead as in the number of extra output symbols that the decoder should collect greater than the block size is proportionately smaller for the larger blocks, wherein overhead is defined to be work or information that provides support possibly critical support for a computing process; and page 19, section [0206], wherein the block sizes are fixed, then the segment sizes can be adjusted so that segment contains an integer number of blocks by decreasing or increasing the segment size, Horn).

Claim 5:

Regarding claim 5, Horn teaches the transmission data generation method, further comprising:

a fixed block transmission time calculation step of calculating the transmission time of said fixed block based on the playout time of said fixed block (page 9, section [0093], wherein to calculate the value B(I,F), for the current output symbol, and wherein the calculator calculates the value B(I,F) of the output symbol being calculated based on a value faction, Horn[2]);

a fixed block count calculation step of calculating the number of fixed blocks included in the segment for each segment of the contents based on the transmission time of said segment (page 13, section [0132], wherein client downloads information about block i at time t, and define T(i) to be time and block I begins playing out, where again time is measured relative to the client, where time zero is when the client initiates the session and the download starts, and

[2] The Examiner interprets the terms "transmission time" and "playout time" to be same functionality in which the method of both consist of carrying data between the server and the client, and determining the rate/calculating to serve each segment as to when client may start receiving and a time at which the client may stop receiving, but using different wording to address the claim limitations. Claim 5 can also read on independent claims 1,2, and 7. For example: Claim 5 states: calculating the number of fixed blocks included in the segment for each segment of the contents based on the ***transmission time*** of said segment and wherein Claim 7 states: calculates the playout time of fixed block based on the size of said fixed block and calculates playout time of a segment for each segment of contents based on the calculated ***playout time*** of the segment.

given a fixed maximum client download rate Rd, the goal of the MOD system is to achieve uninterrupted play out of the media object, Horn) and the transmission time of said fixed block (page 4, section [0052], wherein the server and the client are more of a constraint on the transmission stream as in the maximum rate that the client can download a media object, Rd, may be constrained and may be fixed for a particular media object as stated on page 4, section [0054], Horn); and

total fixed block playout time calculation step of calculating the playout time (Figure 1, diagrams 120(1) and 120(m), Horn) of all the fixed blocks included in the segment for each segment of the contents based on said calculated number of fixed blocks and the playout time of said fixed block (page 13, section [0132], wherein client downloads information about block i at time t, and define T(i) to be time and block I begins playing out, where again time is measured relative to the client, where time zero is when the client initiates the session and the download starts, and given a fixed maximum client download rate Rd, the goal of the MOD system is to achieve uninterrupted play out of the media object, Horn),

wherein in said playout time calculation step, the playout time of all the fixed blocks included in said segment is regarded as the playout time of the segment for each segment of the contents if the size of the segment is an integer multiplication of the size of the fixed block (page 18, section [0200], wherein each new segment is scheduled to be downloaded at an aggregate rate of c.multidot.Rd/r, where c is an integer between 1 and r in which multiplication is represented by a dot, Horn), and

calculates the transmission time of a segment based on the calculated playout time of the segment (page 13, sections [0133] [0136], wherein he constraint in equation three is due to the

fact that the client should have finished downloading block i by the time it needs to play it out, i.e., by the time blocks 0, . . . , i-1 have completed playing out, Horn); and

if the size of the segment is not an integer multiplication of the size of the fixed block (page 13, section [0137], wherein the startup latency number m to be the number of blocks that the client plays out in Ts seconds, i.e., m=Ts/Tf=Bmin.multidot.Ts/Rp, in which notes that m need not be an integer, Horn),

the playout time of the segment is calculated based on the playout time of an variable block of said segment (page 16, section [0175], wherein media object scheduler using variable fixed rate segment size to determine the rate and schedule pair for each segment in a media object, and its downloaded to play it out uninterrupted using a calculation based, Horn) and the playout time of all the fixed blocks included in said segment (page 16, section [0176],wherein Ns(i) aggregate size of the segments, and the play out rate is Rb Mbps then segment S(i) begins playing out Ns(i)/Rp seconds and also see Figure 13, all features wherein the process is described in further details, Horn).

Claim 6:

Regarding claim 6, Horn teaches wherein in said variable block setting step, the product of the playout time of said variable block (page 17, section [0182], wherein the steps of the playing out segment begins and playing out set completes is defined and wherein the product is interpreted to be the result of the required server bandwidth is Rs=21.95, Horn) and the overhead in said variable block is determined for each segment of the contents using the playout time of all the fixed blocks included in said segment and transmission time of said segment (page 5, section [0062], wherein the size of each block determines the efficiency of the chain reaction encoder

and decoder where in generally the trade off between the overhead and the encoding/decoding speed for a fixed number of symbols, wherein the encoding/decoding speed in Mbps increases as the symbol size increases in which the amount of overhead, i.e., the number of extra output symbols that the decoder should collect greater than the block size, is proportionately smaller for larger blocks, and to minimize the required overhead the blocks should therefore be as large as possible, and for a fixed block size, increasing the symbol size improves encoding/decoding speed at the cost of overhead performance, Horn), and

the playout time of said variable block (page 5, section [0058], wherein playing out the block and wherein size and rate of each block is served, Horn) and the overhead in said variable block are determined from said product using a predetermined numerical analysis method (pages 12, section [0131], wherein pseudo segment is interpreted to be the overhead as overhead is defined to be a use of resources performing a particular feature and wherein a pre- downloaded segment performs a numerical analysis, in which numerical analysis is interpreted to be mainly a real variable or, numerical linear algebra over the real or complex fields, providing the solution of differential equations, Horn).

Claim 7:

Regarding Claim 7, Horn teaches a transmission data generation comprising:

time calculation (Figure 4, diagram 425, Horn) means which sets the size of a fixed block based on the overhead (page 5, section [0062], wherein the size of each block determines the efficiency of the chain reaction encoder and decoder where in generally the trade off between the overhead and the encoding/decoding speed for a fixed number of symbols, wherein the encoding/decoding speed in Mbps increases as the symbol size increases in which the amount of

overhead, i.e., the number of extra output symbols that the decoder should collect greater than the block size, is proportionately smaller for larger blocks, and to minimize the required overhead the blocks should therefore be as large as possible, and for a fixed block size, increasing the symbol size improves encoding/decoding speed at the cost of overhead performance, Horn),

calculates the playout time of the fixed block based on the size of said fixed block (page 9, section [0093], wherein to calculate the value B(I,F), for the current output symbol, and wherein the calculator calculates the value B(I,F) of the output symbol being calculated based on a value fraction, Horn),

calculates the playout time (Figure 1, diagrams 120(1) and 120(m), Horn) of a segment for each segment of the contents based on the playout time of said fixed block (page 13, section [0132], wherein client downloads information about block i at time t, and define T(i) to be time and block I begins playing out, where again time is measured relative to the client, where time zero is when the client initiates the session and the download starts, and given a fixed maximum client download rate Rd, the goal of the MOD system is to achieve uninterrupted play out of the media object, Horn), and

calculates the transmission time of a segment based on the calculated playout time of the segment (page 13, sections [0133] [0136], wherein the constraint in equation three is due to the fact that the client should have finished downloading block i by the time it needs to play it out, i.e., by the time blocks 0, . . . , i-1 have completed playing out, Horn);

division means (page 5, section [0057], wherein a media object file may be divided into sequentially numbered blocks, where the blocks index indicates the temporal position of each

block in playing out the media content, Horn) which divides the contents into segments according to the transmission time of the segment calculated by said time calculation means (page 7, section [0078], wherein the blocks or set of blocks are chosen to generate an output symbol will be referred to as the blocks associated with that output symbol, and page 7, section [0079] , wherein the block encoder provides the output symbol to a transmit module and the transmit module may also provide the key of each such output symbol and the set of blocks associated with each output symbol, and page 8, section [0082], wherein the receive module receives the output symbols and the receive module may use timing information in order to calculate the key or the block, Horn) and divides said divided segments into block (page 7, section [0078], wherein each segment of the media object may be logically divided into plurality of disjoint blocks by the media block scheduler, in which segment is defined as dividing into segments, Horn); and

meta contents (page 5, section [0059], wherein the client stores the packets for a block as they arrive and waits for the entire block as wherein meta contents are the packets, Horn) means for converting (page 11, section [0112], wherein to convert from megabits to megabytes, divided by eight, Horn) the contents into meta contents by adding the overhead for each block divided by said division means (page 19, section [0205], wherein the client storage requirement is limited, it may be preferable to increase the server bandwidth and the total number of segments in the media object, and place an upper limit on the segment size, and the server bandwidth can be further divided so that a segment finishes downloading as late as possible before it is scheduled to play out, Horn),

wherein when the size of segment is an integer multiplication of the size of the fixed block, said time calculation means **calculates each time** the overhead for each segment based on the overhead in said fixed block, and when the size of the segment is not an integer multiplication of the size of the fixed block, said time calculation means determines the playout time of variable block which cannot be divided by said fixed block and the overhead in the variable block, and sets the overhead for each segment based on the overhead in said fixed block and the overhead in the variable block of said segment (Refer to claim 1, 2, and 5, wherein the following limitation are substantially the same/or similar and therefore rejected under the same grounds, Horn)

Response to Arguments

Applicant's arguments filed on 4/25/2007, with respect to the rejected claims in view of the cited references have been considered but are moot in view of applicant's amended claims necessitate new ground(s) of rejection.

Prior Art of Record

(The prior art made of record and not relied upon is considered pertinent to applicant's disclosure)

1. Horn et al (US PG Publication US 2002/0107968) discloses a media object is scheduled for transmission between a server and a client, wherein the media object is partitioned into segments of blocks, each block is a unit of media for which a client will wait to receive an entire block before playing out the block, and wherein each segment includes an integer number of blocks

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene R. Rose whose telephone number is (571) 272-0749. The examiner can normally be reached on 8:00 am - 4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HRR
Technology Center 2100
July 8, 2007

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